

Mobile against poverty

Mobile communications can help reduce poverty in emerging markets. And operators, with the right business model, can also make a good ROI

Mobile communications is a great enabler. Quite apart from the benefits that it is bringing to the more prosperous areas of the world it has the potential to transform the lives and prospects of poorer, more remote communities.

However, for this to happen on any scale, operators and service providers need to adopt new business models. And they have to be convinced that these models are sustainable and will produce a satisfactory return on investment.

This all ties in with the United Nations Development Programme (UNDP) initiative, which is seeking to promote its vision of 'Communication for All'. The aim is to help eradicate poverty in the developing world. And by committing itself to the UN's Millennium Development Goals, the international community has pledged to reduce extreme poverty — those whose income is currently less than US\$1 per day — by half by 2015.

The active participation of business is central to meeting this target and the Information and Communication Technology (ICT) sector has a major part to play in this.

The UNDP has been working with the Swedish International Development Cooperation Agency (Sida), alongside Ericsson, to understand the benefits that mobile communications can bring to poorer communities and to develop a sustainable business model that will make it possible.

The perceived wisdom is that the poor have no purchasing power but this is not so. The combined earnings of 680 million households in 20 emerging markets amounts to US\$2 trillion and studies by the UNDP indicate that they are willing to spend 5-10 per cent of their earnings on telecom connectivity.

In these markets, the mobile phone is

the most accessible and practical form of information communication technology (ICT). However, it's something that needs to be used carefully — every call has to be seen as an investment that must generate a return in terms of obtaining information or generating income.

The business model for bringing mobile communications to the more remote areas of emerging markets calls for appropriate, affordable technical solutions that can be provided with lower levels of investment than before. It also needs to address other important issues, such as the cost and availability of power for the network infrastructure in remote areas.

Huge growth potential

Wireless Intelligence, the joint Ovum and GSM Association venture, predicts that by 2010 there will be more than three billion mobile subscribers across the world — a substantial increase on the present number. If this ambitious growth is to be achieved, the majority of new subscribers will have to come from developing markets, notably those in Asia, Africa and Eastern Europe.

These currently less-prosperous markets are going to need kick-starting, unlike the more affluent areas, which have grown continuously for many years but are beginning to approach saturation with slowing momentum.

Generally speaking, today's 2.5 billion subscribers represent the more affluent sections of the world. This still leaves two-thirds of the world's adult population without mobile subscriptions although many of these people have used a mobile phone at some time or another.

All this presents operators with a challenge and an opportunity — achieving

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subscriber growth in less affluent markets in cost-effective and profitable ways. This can only be done by providing the cellular capacity and coverage that makes it possible for everyone who wants a mobile phone to have one. In urban areas, new subscriber growth will put more pressure on existing capacity, while in rural areas the challenge is to provide cost-effective transmission and coverage that will make network extension viable.

Cutting capital and operating costs

What are the main areas of capital and operating expenditure (capex and opex) that need to be addressed to allow operators of GSM/EDGE services to provide affordable access to less well off communities?

Radio networks typically represent 70 per cent of the cost of a complete mobile network, so any savings in this area will have a great impact on total infrastructure costs.

With new technology solutions it is possible to reduce the number of radio sites required by up to 50 per cent. Other substantial cost reductions can be obtained by using pre-configured radio base stations (RBS), site materials, antenna power and installation systems, transmission and services. A scalable core network, using a

African network expansion

One African mobile operator that is going for growth is Celtel, which has been actively improving its networks in several countries, including Sudan, Democratic Republic of Congo, Sierra Leone, Gabon and Chad. Most recently, the operator has upgraded its GSM network in Uganda and Tanzania as part of a major network renewal project.

Using high-capacity base stations, Celtel has been able to reduce the number of sites needed for initial rollout and achieve flexible capacity and coverage expansion - resulting in better coverage for lower investment.

In this way, Celtel managed to double its coverage across Uganda, giving it the ability to offer mobile access to a

much larger share of the population. In addition, the operator has succeeded in improving service quality for its Tanzanian customers. The base stations have been also ready for GPRS/EDGE, allowing a smooth future transition into 3G services.

A recent Yankee Group report shows mobile penetration rates in Uganda and Tanzania of between three percent and four percent respectively. The same report ranks Africa as the world's fastest growing region for mobile communications over the next five years.

This is good news for Celtel, which currently operates in 13 different African countries and is well positioned for expansion across the continent.

transmission-efficient mobile softswitch architecture, can generate additional savings.

The result can be a saving of up to 25 per cent in capital outlay against traditional methods, a similar reduction in power consumption and significant savings on civil engineering and core net-

work opex. All this contributes to a significant cut in the total cost of ownership, brought down by 30 per cent or more and contributes to further savings in rollout and time to market.

Advanced radio features and modular base station systems that can adapt flexibly to different coverage and capacity needs are another key factor in reducing the costs when expanding the radio network.

Providing coverage across large areas often involves bridging vast distances and challenging territory. Often there is little or no existing infrastructure in the form of cables in the ground, and laying copper or fiber is either physically impossible - for example, in mountains - or commercially unviable. For these reasons, microwave transmission has become the preferred transmission method in many emerging markets, reducing entry and running costs as well as contributing to a faster time to market.

Another problem that often needs addressing in remote areas is access to power networks. For those sites without access to the electricity grid, alternative sources can be



Photo courtesy of Ericsson

► School children in South Africa get connected

used. These can include solar, wind, bio-fuel and fuel cell technology.

Where there is more than one operator active in area shared ownership of infrastructure can be another factor in reducing the costs and risks for all parties involved.

A model for Tanzania and Kenya

Studies conducted in Tanzania and Kenya in the last two years, as part of the 'Communications for All' project, clearly show that mobile communications is the most accessible and practical form of information communications technology (ICT) for rural and poorer communities. They revealed that 97 per cent of village populations knew about mobile telephony and half had used a mobile phone but 67 per cent did not know what a computer was and a mere three per cent had ever used one.

In Tanzania average ownership of mobile phones stands at just five per cent but over 50 per cent aspire to have one.

The biggest impact of mobile communications in both Tanzania and Kenya is economic. Mobile phones open up opportunities for business, facilitating trade and providing access to buyers and sellers. Local shopkeepers benefit from the sale of top up cards, providing repair services and also offering recharging services for mobile phones in communities where there is no electricity.

Social networking is important too. Families can be widespread and other forms of communication can be difficult and unreliable.

The studies have also shown that a mobile phone is affordable for families with incomes of US\$3 per day or more. Even so, the phone must be used sparingly. The average spend is between 10 to 20 per cent of income, and a typical 'social' call lasts around 10 seconds while business calls continue for about one minute.

The Tanzanian study indicated that US\$50 was an acceptable handset cost while most people were willing to pay up to US\$0.50 for a one-minute call. The Kenyan study showed that people tend to



Photo courtesy of Ericsson

► Spreading the word in Kuala Lumpur, Malaysia

save up for their handsets, rather than borrowing money in order to purchase a mobile phone.

While the main benefits are economic it is clear that possessing a mobile phone gives people a greater feeling of self-worth, confidence and hope.

Mobile communications has an impact on the wider society in areas such as access to health care, education, finance, security and even fighting crime and corruption.

In addition to providing basic communications services, there are also many follow-on opportunities for revenue generation once a network is in place. For example, SMS messaging can account for a significant part of operator revenues and it is not unusual for the SMS volume to significantly outnumber voice calls in rural communities.

Internet access can also be provided for isolated schools, hospitals, police stations and farms, for example. For more advanced users, PC cards in laptops can provide data and fax services via the mobile network. Initially, Internet access can be delivered by GSM/EDGE technology but this later can be upgraded to WCDMA/HSPA.

Meeting the goal

Technology is not the only matter to be considered. There are many local political, societal and operational issues. Nevertheless, finding technical solutions opens the way for serious future development, of the

sort if growth statistics are to be realised.

Governments need to be persuaded not to tax mobile phones and services as luxury items. A GSM Association survey indicates that if all taxes and duties were removed from mobile handsets, penetration would rise by 20 per cent. The commercial environment is also vital: open competition, with adequate safeguards, is needed to ensure low prices and consumer choice.

With access to affordable handsets, shared usage and low tariffs, mobile communications can be made widely available, especially as many people use their phones primarily to receive incoming calls. Low top-up denominations for pre-pay services appeal to consumers with less than a dollar to spend. At the same time, it must also be simple for them to sign up and stay connected.

The United Nations' Millennium Development Goals, to halve extreme poverty by 2015, are ambitious. There are those who think it cannot be done. And while no-one would suggest that mobile communications can do this on its own, it can certainly contribute to the economic and social well being of poorer communities. The technical and business models exist to make it not only possible but profitable for operators and service providers. ◀

Michael Bjärhov, head of Ericsson's 'Communication for All' programme